

Sonchus is a late visitor. This plant and Taraxacum threaten to engulf all the rest, and to supersede Atropis and Amaranthus even in the richest soil. A portion of the two lots I never irrigate. Here the native plants resist all encroachment from introduced species.—E. L. BERTHOUD, *Golden, Colorado*.

[The accompanying list gives the names of sixty-five genera (species not named) of introduced plants. Of these six are indicated as having two species each introduced and one with three species. In addition there are seven of whose introduction there is some doubt.—EDS.]

NOTES AND NEWS.

DR. KARL VON DALLA TORRE has been called to the professorship of botany in the University of Innsbruck.

DR. H. MÖLLER, heretofore *privat-docent* in botany in the philosophical faculty of the University of Greifswald, has been called to a professorship.

THE FLORA of St. Vincent (W. Indies) is catalogued in a recent *Kew Bulletin* (Sept.). In this flora the Leguminosæ largely predominate, with the Gramineæ, Rubiaceæ, Compositæ, and Orchidaceæ following at a wide interval.

THE KEW *Bulletin of Miscellaneous Information* is being made more and more valuable to systematists. The July number contains the fifth decade of new plants cultivated at Kew, and the sixth decade of new orchids. The department of Miscellaneous Notes is also to be commended for the current information it contains.

THE SEVENTH annual report of the Botanist of the Nebraska State Board of Agriculture is chiefly made up of a preliminary description of the native and introduced grasses of the state, aided by numerous cuts in the text. The species number 154, and a call for the aid of observers throughout the state is made by Dr. Bessey.

THE ARNOLD ARBORETUM is the subject of very high praise from George Nicholson, Curator of the Kew Gardens, who recently visited it. His impressions concerning it appear in the *N. Y. Tribune* (Sept. 10th) and are copied in *Gardener's Chronicle* (Oct 7th). It is certainly true that this splendid institution is too little known and appreciated in its own country.

DR. FRIEDRICH TRANGATT KUETZING, the distinguished algologist, died at his home in Nordhausen, Saxony, on the ninth of September in the eighty-seventh year of his age. He was born at Ritteburg in Thuringia, December 8, 1807, studied at Halle, was made professor of natural science in the Realschule at Nordhausen in 1835, and still retained the position at the time of his death.

UNDER THE LAW of homonyms, Professor E. L. Greene, in *Erythra* (October), proposes the name *Forsellestis* for *Glossopetalon* Gray, (1853), not Schreber (1789), and *Bourdonia* for *Keerlia* Gray (1852), not Dr.

(1836), both of *Plantæ Wrightianæ*. Forselles was a Swedish mining engineer and botanical writer of half a century ago, and Bourdon a Parisian botanist in the earlier part of this century.

LIGNIER STATES¹ that a very concentrated alcoholic solution of vesuvin can be used to show up to advantage the lignified parts of silicified (fossil) plants. Sections cleaned in chloroform are placed for twenty-four hours in the solution, washed in absolute alcohol and mounted in balsam.

JENSEN finds² that *Euglena viridis* and *Chlamydomonas pulvisculus* show distinct geotropism, though usually the geotactic movements are overpowered by the directive influence of light, heat and chemical agents. Upon his experiments he bases a theory of geotropism of which the keynote is the differences of hydrostatic pressure in different sections of the organism.

THE FIRST half of an extensive contribution to the literature on the pollination of flowers will be found in the *Botanisch Jaarboek*³ (1893). 156-452. The work is by Dr. J. MacLeod and is illustrated by many excellent figures in the text. After the admirable pattern of Müller he gives an account of the relations between insects and flowers in a part of Flanders. The second installment will follow in volume six of the *Jaarboek*.

MR. ARTHUR BENNETT, in his notes on *Potamogeton* in *Journal of Botany* (October), considers two American species, *P. Spirillus* Tuck. and *P. fluitans* Roth. The former he considers to be *P. dimorphum* Raf., and under the latter considers the vexed question of its relation to *P. lonchites* Tuck., finally proposing to consider them distinct, the *P. fluitans* Roth not occurring in North America, and *P. lonchites* being a synonym of *P. Americanus* Chamisso.

THE MORPHOLOGY of the root tubercles of Leguminosæ is discussed by Dr. Albert Schneider, in the *American Naturalist* for September. The work was done in the University of Minnesota, and the general conclusions reached are that the tubercles are developed exogenously from a meristem area surrounding the infected region, have a well developed vascular system differing from that of the root, and anatomically resemble a stem more closely than a root.

IN 1889 the genera of Musaceæ (Banana Family) were presented by Petersen in Engler and Prantl's "Die natürlichen Pflanzenfamilien", and now, in the *Annals of Botany* (vii. 189-222), Mr. J. G. Baker publishes a complete synopsis of the same family. The true bananas (*Musa*) are naturally the most perplexing, Petersen estimating that there are about 200 cultivation forms, reducible to about twenty species. Baker presents them in thirty-two species, four of which are new.

IN A MEMOIR on the anatomy of the cell in fungi and filamentous algae, W. Wahrlich shows that protoplasmic continuity exists very

¹Bull. Soc. Linn. Norm. IV. vi (1892). 9. — Bot. Cent. LVI (1893). 18.

²Pflüger's Archiv f. ges. Physiol. LIII (1893). 428. — Bot. Cent. LVI (1893). 20.

³Issued by Dodonæa; publisher: J. Vuylsteke, Koestraat 15, Ghent, Belgium.

generally in the fungi, a strand passing through a simple central pore. He contests emphatically the presence of plasmic threads in the algæ, in opposition to Kohl. As to the division of the cells of algæ he repudiates the common theory of the origin of the transverse wall as an annular thickening and revives the old "box" theory, holding it to be formed as a true annular fold, following the contour of the shrinking protoplasm.

STAHL'S well known researches on the protective function of oxalic acid have been confirmed by a study of the distribution of oxalic acid and acid oxalates by Rudolf Giessler.³ He finds them chiefly in the epidermis and peripheral tissues; in much smaller quantities, if present at all, in deeper tissues; generally wanting in underground parts. Tannin seems to serve as a protection when oxalic acid is wanting. His anatomical studies are complemented by experiments with snails and plant lice.

THE *Bulletin of the Torrey Botanical Club* for September contains the following papers read before the botanical section at the Madison meeting: *Williams* on Lichens of the Black Hills and their distribution; *Atkinson* on Symbiosis in the roots of the Ophioglossaceæ, and Photography as an instrument for recording the microscopic characters of micro-organisms in artificial cultures; and *Pammel* on Crossing of Cucurbits, a paper read by title, still further testifying by experiments to the fallacy of the popular belief that cucurbits hybridize.

IT SEEMS that the name *Halesia*, as applied to the "silver-bell trees" of the south and dedicated to the distinguished Stephen Hales, must disappear. In *Garden and Forest* (Oct. 18th) Dr. N. L. Britton points out that it is a homonym, the earlier *Halesia* of P. Browne being a West Indian tree, now *Guettarda* L. Under the circumstances the genus is very appropriately dedicated to Dr. Charles Mohr of Mobile, whose name should surely be connected with the southern forest trees. The three species, therefore, stand as *Mohria Carolina* (*Halesia tetra- ptera*), *M. diptera* and *M. parviflora*.

THE REINHOLD-GILTAY microtome, a machine of rather complex construction, but adapted to the finest work, is described by Dr. J. W. Moll in the *Zeits. f. wiss. Mikros.* IX (1892). 445-465. In the same paper he describes investigations on the tearing and compression of sections in cutting and the preparation of the knife to avoid these difficulties. He also sought out three polishing powders which give a proper edge for the best results. The first is iron oxide prepared by precipitating iron oxalate from solutions of ammonium oxalate and iron sulphate, drying, glowing, and rubbing up to a fine red-brown powder, (which, however, loses its sharpening power when it becomes red). The second is prepared by heating Mohr's salt in a Hessian crucible in a furnace until no vapor is given off, rubbing up the mass in water, washing and drying. The third is a polishing powder of unknown composition obtained under the name of "Diamantine no. 1." All three are used after polishing the knife edge with Vienna chalk. A piece of plate glass gives the best surface on which to use all such powders.

³Jenaische Zeits. f. Naturwiss. xxvii (1893). 344.—Bot. Cent. lvi (1893) 35